Reviewer's report

Title: Multiplicative Disadvantage of Being an Unmarried and Inadequately Insured Woman Living in Poverty with Colon Cancer: Historical Cohort in California

Version: 2 Date: 3 November 2014

Reviewer: Melissa Clark

Reviewer's report:

This is an interesting manuscript about the disadvantages of being an unmarried and inadequately insured woman living in poverty on receipt of chemotherapy and survival from colon cancer.

Major Compulsory Revisions

1. Overall, more information would be helpful about the choice of chemotherapy for colon cancer as the exemplar for exploring this multiplicative effect of insurance, poverty, and marital status? Why colon cancer? Why chemotherapy specifically? For example, why not treatment for heart disease? What about chemotherapy for colon cancer makes this outcome particularly relevant for addressing the multiplicative disadvantage hypothesis? The authors use the term secondary analysis on line 131, which implies that they intend for there to be a primary analysis, which I assume to be the chemotherapy outcome. It would be helpful if more information was added about the outcomes chosen and why the analyses were divided into primary and secondary ones with regard to the research question.

2. Lines 115-116: Given that all analyses include the health insurance variable, there is concern about the way that the construction of the health insurance variable was explained and interpreted. Given that the majority of colon cancer patients will be over age 65, most will be eligible for Medicare. Therefore, what does adequate insurance imply with regard to private insurance. Does this mean that they had private supplemental insurance? Does Medicare in the inadequate category refer to Medicare only without any private supplemental coverage? The way that the health insurance variable was created and/or how it has been presented is very important given the manuscript's conclusions.

3. Lines 172-173: It is not clear what data from this study provide direct evidence that the receipt of chemotherapy is related to survival chances among those with non-localized and non-metastasized disease particularly because there were no differences in survival. More detail here would be helpful. Similarly, more detail would be helpful about the authors’ conclusions that chemotherapy is associated with quality of life among those with metastasized disease.

Minor Essential Revisions

4. Line 104: What do the authors mean by the fact that they "serendipitously"
explore the 4-way hypothesis?

5. Is the information presented about the power analysis for the survival analyses specifically or for all analyses?

6. Discussion: While the authors present compelling arguments about the economic disadvantages for unmarried women with regard to chemotherapy receipt, there are other potential explanations that warrant mention including the fact that they may have smaller social networks to drive them to chemotherapy and/or care for them when they are ill from the chemotherapy. Further, there is a body of literature about the social support among married versus unmarried individuals, including the provision of emotional and instrumental support with regard to a health condition. Addition of some of this literature would strengthen the discussion.

Discretionary Revisions

7. Lines 91-93: What are gold, platinum, bronze and silver health plans?

8. Lines 111-112: The categories used for socioeconomic status are not clear. It appears that words may be missing from this sentence.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.